

Appl. No.: 10/821,385  
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Off. Act. Dated: 12/01/2005

**Amendments to the Drawings:**

The attached drawing sheet is a replacement sheet containing an amended FIG. 8 which replaces the original sheet containing FIG. 8. As the replacement sheet is based on Examiner suggestions, no markup sheet is included.

Attachment: Replacement Sheet

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### **REMARKS/ARGUMENTS**

Reconsideration of this application is respectfully requested in view of the foregoing amendments and discussion presented herein.

1. **Allowable Subject Matter.**

The Applicant notes with appreciation the Examiner's determination that Claims 13, 19 and 25-30 would be allowable if rewritten in independent form including the limitations of the base claim and any intervening claims.

**Allowability of Claim 13.** In response to the allowable subject matter of Claim 13, Applicant has added Independent Claim 33 to the application which incorporates Claim 13, intervening claims 12, 11, 10, 9, 7, 6 as well as base Claim 5.

Therefore, new independent Claim 33 contains the limitations of Claim 13 rewritten in an independent form including all the limitations of the base claim and any intervening claims.

**Allowability of Claim 19.** In response to the allowable subject matter of Claim 19, Applicant has incorporated the material of Claim 19 (now cancelled) into the base independent claim, Claim 5 (no intervening claims).

Therefore, amended Claim 5 now contains the limitations of Claim 19 rewritten in an independent form including all the limitations of the base claim and any intervening claims.

**Allowability of Claim 25.** In response to the allowable subject matter of Claim 25, Applicant has added Independent Claim 34 to the application. New Claim 34 contains the material of Claim 25 as well as that of intervening claims 24, 23, 21 and base Claim 20.

Therefore, new independent Claim 34 contains the limitations of Claim 25 rewritten in an independent form including all the limitations of the base claim and any intervening claims.

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Allowability of Claim 30. In response to the allowable subject matter of Claim 30, Applicant has added the limitations of dependent Claim 30 to independent Claim 20, there are no intervening claims.

Therefore, amended Claim 20 contains the limitations of Claim 30 rewritten in an independent form including all the limitations of the base claim and any intervening claims.

New Dependent Claims 35 - 39. New dependent Claims 35-39 have been added to the application to incorporate the material contained within dependent claims 26-30 depending from Claim 25, as dependent claims stemming from new independent Claim 34 which contains the material of independent Claim 25, the intervening claims and base claim 20.

Amendment of Claim 1. Independent Claim 1 has been amended to include the material of Claim 19 and relevant aspects of Claim 5 toward expediting the allowance of Claim 1 and the claims which depend therefrom. The structure and recitations within Claim 1 have been substantially amended with a view towards improving readability.

Therefore, the above amendments should put all pending claims in a condition for immediate allowance.

2. Objection to Drawings.

Examiner objected to the drawing of FIG. 8 for the representation of "*wireless networks*" instead of "*wireless network devices*".

In response the Applicant has amended the blocks WNA, and WNB in FIG. 8 as directed by the Examiner to indicate "Wireless Network Device" to alleviate any possible confusion. In addition, the stylus device 730 has been more appropriately represented as a narrow rectangle rather than a line, while text "*stylus in motion*" has been added to clarify the intent of the stylus images with associated direction arrow. In view of the nature of the amendments, no markup sheet has been included.

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3. Objection to Specification.

Typographical error correction.

Examiner objected to numerous references to wireless networks, when the intent appears to be wireless network 'devices'; with paragraphs [0050], [0052], [0055] and [0059] being specifically mentioned. In addition an incorrect figure number reference is noted in paragraph [0055].

In response, Applicant has amended those paragraphs to correct these deficiencies.

However, Applicant notes that these sections appear to correspond to paragraph numbers [0045], [0047], [0050] and [0054], respectively, in the copy of the application that Applicant has on hand, as confirmed by our telephonic messaging of 01/25 - 01/26.

Understanding of "*Plurality of wireless network devices*".

Examiner has indicated that the meaning of Claims 4, 5 and 20 is unclear in reference to the "*monitoring motion of a plurality of wireless network devices*".

In response, Applicant has amended the claims to enhance clarity, and provides the following discussion of how the claims and specification clearly delineate these aspects. The system can track multiple wireless devices and the following is provided in explanation. It should be noted that the relative distance between wireless devices is determined, regardless of whether those devices are stationary or mobile. In FIG. 8 it will be noted both the PDA 740 and stylus 730 are mobile devices. The relative motion of the stylus in relation to the mobile device 740 and fixed devices 710 and 720 allows the system to determine how the stylus is being moved relative to the other devices. It should be noted that although the PDA 740 would typically be held somewhat stationary by the user when the user operates the wireless stylus device, which simplifies determinations of stylus movement in relation to the other devices, it remains a mobile device.

A description of processing the proximity motion is found in the specification, such as in paragraph [0044]: "...executed by programming within electronic media

*devices containing a processing element (computer) and the programming is preferably incorporated into the IEEE 802.11 protocol MAC layer to improve the analysis...".*

Additional reference is also found in paragraphs [0045], and so forth. First, it will be noted that the inclusion of field strength values within the frames of the communication, provide that every device receiving the wireless signals is also receiving field strength information. It should be appreciated that the processing by the modules of FIG. 5 can be performed within any, or all, of the devices coupled to the wireless network.

Throughout the text it is brought out that these wireless devices are in communication with one another, wherein computations according to the invention can be performed within any one of the devices communicating on the wireless network as each wireless device receives signal strength from each other wireless device.

Examiner brings up a question regarding FIG. 8 as to where the modules are located, stationary or nonstationary computer, how the measurements get to the modules and the differences between the modules of FIG. 6 and FIG. 8. First, it should be noted that the programming, such as for detecting distances, is found in the network device that desires to determine distance. This is pointed out in Claim 2 which indicates programming being located within the first network device of Claim 1. In addition, it will be noted that all the wireless devices can communicate with one another, and any of the devices that desire to determine the position of other devices can process the range information within the described modules of the system. In the example of FIG. 8 the specification states that *"...with the prediction of the source and the target wireless network devices, the system could have the two wireless network devices interact with each other. For example, the image in the WNC 740 could be dragged into the WNB 720."* The above discloses that both the source (PDA WNC 740) and the target (WNB 720) can perform the calculations in response to the movement of WND 730 and interact so that the image displayed by WNC 740 is communicated to WNB 720 for display. It will be appreciated that in the example, the devices must recognize that the stylus is being moved to indicate a relationship

between WNC and WNB, and not between WNC and WNA. The disclosure of FIG. 8 has similarities with FIG. 6, but describes a more detailed embodiment in which relative movements are detected between the devices to direct activity of a user interface.

4. Objection to Claims 2, 4, 5 and 20.

Claims 2, 4, 5 and 20 were objected to for the following informalities.

(a) Claim 2. An objection was raised by the Examiner with regards to the phrase “networks” in a given context that should more accurately reflect that it is a network device being referred to. In response, an amendment has been made to dependent Claim 2 to change the term “networks” to “*communication devices within said plurality of networked communication devices*”, to overcome Examiner objection.

(b) Claim 4. An objection was raised by the Examiner with regard to how the phrasing within Claim 4 (as well as Claims 5 and 20) comport with monitoring motion as described within the specification. An amendment has been made to dependent Claim 4 which clarifies proximity motion sensing as: “*a motion monitor module configured for monitoring proximity motion of one or more wireless network devices within a plurality of wireless network devices in the wireless network system*” which also provides improved antecedent basis with the last element of Claim 4.

(c) Claim 5. An objection was raised by the Examiner with regard to how the phrasing within Claim 5 (as well as Claims 4 and 20) comport with monitoring motion as described within the specification. An amendment has been made to independent Claim 5 which changed the preamble making it applicable to detecting motion of a single wireless network device, and included proper antecedent basis for the plurality of wireless network devices. Also the at least three wireless network devices is clarified as being included within the plurality of wireless network devices.

(d) Claim 20. An objection was raised by the Examiner with regard to how the phrasing within Claim 20 (as well as Claims 4 and 5) relating to monitoring motion as described within the specification. An amendment has been made to Claim 20 which removed the preamble and included description of communicating between the plurality

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of wireless network devices including a first wireless network device. It will be appreciated that the method can execute within any of the plurality of wireless network devices. The distance vectors determination is clarified as being between "*said first wireless network device within the plurality of wireless network devices*". The remaining references now appear to properly tie in with the amended recitation.

5. Rejection of Claims 1-12, 14-18, 20-24, and 31-32 under 35 U.S.C. § 103(a).

Claims 1-12, 14-18, 20-24, and 31-32 were rejected under 35 U.S.C. § 103(a) as being unpatentable over a combination of references, within the group: Gray (U.S. Publ. No. 2003/0043073), MacDonald (U.S. Patent No. 5,732,354), Chandra (U.S. Publ. No. 2005/0143119), Gorday (U.S. Publ. No. 2004/0192331), and Sagiura (U.S. Pat. No. 6,362,783).

In order to expedite issuance, Applicant has amended independent claims to include the patentable subject matter, without waiver or estoppel of the originally filed claims. Accordingly each amended independent claim is patentable and the claims which depend therefrom should be considered *a fortiori* allowable.

Claim 1. Independent Claim 1 has been amended to incorporate the material describing the motion information being input to a user interface, which was found allowable with regard to original Claim 19. Amended Claim 1 describes the aspects of the invention in a different manner toward improving readability. Specifically, the "*means for detecting*" has been replaced with a detector. Material in the claim describes the first network device, the communication of signal strength information within the frames, and motion sensing aspects, as were similarly described within Claim 5, from which Claim 19, deemed allowable, was dependent upon.

Accordingly, since Claim 1 describes the wireless motion sensing aspects found in original Claim 5 and Claim 19, which were not taught by the relied-upon references it should be allowable, as well as the claims with depend therefrom.

Claim 5. Independent Claim 1 has been amended to incorporate the material of Claim 19 (held as allowable). In addition, Claim 5 has been amended toward improving

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readability.

Accordingly, as amended Claim 5 contains similar motion detection description of original Claim 5 and contains the user interface input description from original Claim 19, amended Claim 5 and the claims which depend therefrom should be considered allowable.

Claim 20. Independent Claim 20 has been amended to incorporate the material of Claim 30 (held as allowable). Claim 20 has also been amended with regards to language choices toward improving readability.

Accordingly, amended Claim 20 further incorporates the user interface input description from original Claim 30 held to be allowable, wherein Claim 20 and the claims which depend therefrom should be considered allowable.

The Applicant respectfully submits, in view of the above, that Claims 1-18, 29, 31-39 recite one or more elements not found in the cited references and are neither anticipated nor obvious in view of those references.

6. Obviousness Considerations of Claims 33-39.

Independent Claims 33 and 34 represent original claims held to be allowable if drafted in an independent form with the inclusion of intervening claim material. Specifically, Claim 33 comprises the material from original Claims 5, 6, 7, 9, 10, 11, 12 and 13. Similarly, Claim 34 comprises the material from original Claims 20, 21, 23, 24 and Claim 25. Some changes to the wording of Claims 33 and 34 were performed toward aiding readability.

In view of the allowability of the claim elements included within Claims 33 and 34, these claims and the claims which depend therefrom, should be considered patentable over the combination of cited references, specifically: Gray (U.S. Publ. No. 2003/0043073), MacDonald (U.S. Patent No. 5,732,354), Chandra (U.S. Publ. No. 2005/0143119), Gorday (U.S. Publ. No. 2004/0192331), and Sagiura (U.S. Pat. No. 6,362,783).



Therefore, Claims 33-39 should be considered patentable over the cited references.

7. Amendment of Claims 1-30.

Claims 19 and 30. Dependent Claims 19 and 30 were cancelled, as the material of these claims has been incorporated within independent Claims 5 and 20, respectively.

Claim 1. Toward incorporating the patentable material of Claim 19 associated with base Claim 5, independent Claim 1 has been amended to include the limitations of Claim 19. Claim 1 includes these materials in an amended claim form which is provided to increase claim readability and flow.

Support of “*plurality of networked communication devices*” is found in the phrasing of the “*plurality of wireless network devices*” as recited in numerous of the original claims which are described for “*communicating over a wireless network*”. In addition, that these are communication devices is clearly seen at the bottom of paragraph [0007]: “...*while ensuring that the communication devices comply with the standard.*” The association is also brought out in paragraph [0016]: “*between mobile wireless network devices communicating over a wireless network*”, and elsewhere.

The communication devices within the plurality of communication devices are recited as being “*a first communication device, a second communication device, and a third communication device*”. This nomenclature is carried throughout the bulk of the claims to enhance readability.

The “*means for detecting*” of original Claim 1 was replaced with a “*detector*”, which is similarly conveyed in the new claim and configured for determining distances.

Determining positions and motions in original Claim 1 was amended to describe the determination of distances and motions separately and in greater detail as “*determining the distances*” and “*generating motion information*” within amended Claim 1. These positions and motions within amended Claim 1 are directed to a first communication device.

The element of generating motion information for use within a user interface was found in original Claim 19, while support for “*user interface control module*” is found throughout the specification including paragraph [0052].

Claim 2. Dependent Claim 2 has been amended to change a reference to “*networks*” to read “*communication devices*” to overcome the Examiner objection. The term “*detector*” is used to replace the “*distance detecting means*” element to provide a proper antecedent basis with the amendment of Claim 1. In addition, a portion of the “*determining*” step has been stricken to provide improved antecedent basis with amended Claim 1.

Claim 3. Dependent Claim 3 has been amended to describe the distance vectors being generated between a first communication device and said second and third communication devices.

Claim 4. Dependent Claim 4 has been amended to provide a more correct basis for understanding plurality of wireless network communication devices. The term “*detector*” is used to replace “*distance detecting means*” to provide a proper antecedent basis with the amendment of Claim 1. The motion monitor line has been eliminated as the functionality is properly described in the attributes of the estimation module, vector coordinates module, and proximity motion module.

Claim 5. Independent Claim 5 has been amended to incorporate the limitations of dependent Claim 19 (now cancelled), whose material was found to be allowable. The objected to reference to “*networks*” in the preamble was changed. The preamble was removed and the relations between the “*network communication devices*” are now described in the body of the claim.

In addition Claim 5 was amended to improve readability. The terminology of “*first network communication device*” and “*second and third network communication devices*” was adopted and carried through the claim. The recitation of the “*signal strength monitoring module*” was changed to read “*signal strength estimation module*”, toward improving the clarity of recitation. Support for this phraseology being found in

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the specification at paragraph [0047] as "*a signal strength estimation module 420*", and elsewhere.

Claim 6. Dependent Claim 6 has been amended from "4" to "5", to correct the reference to the proper parent claim. The body of Claim 6 has been redirected to include the material of amended Claim 25 which recites recalibrating coordinate and position information when a fourth (previously referred to as "new") wireless network device enters or leaves the wireless network.

Claim 7. Dependent Claim 7 has been amended to depend from Claim 5 instead of Claim 6. Furthermore, communication device phrasing is adopted to provide a proper antecedent basis.

Claim 8. Dependent Claim 8 has been amended to depend from Claim 5 instead of Claim 7. In addition the claim has been amended to add the phrase "*at least two*" to assure a proper antecedent basis for "*other wireless network devices*".

Claim 9. Dependent Claim 9 has been amended to depend from Claim 5 instead of Claim 7. In addition the claim has been amended to recite "*configured for utilizing*" instead of "*utilizes*" toward providing improved clarity.

Claim 10. Dependent Claim 10 has been amended to correct antecedent issues arising from the amendment to Claim 9.

Claims 11-12. Dependent Claims 11 and 12 have been amended to depend from Claim 5 instead of from Claims 10 and 11 respectively. Dependent Claim 12 has also been amended to remove a somewhat redundant recitation of the two or three dimensional nature of the dimensional coordinates.

Claim 13. Dependent Claim 13 still recites "*a matrix of distances between each of said plurality of wireless network communication devices*" but has been rephrased toward improving readability

Claims 14-16. Dependent Claims 14-16 have been amended to provide proper antecedent basis with amended Claim 5 by changing "*signal strength motion sensor module*" to read "*signal strength estimation module*". In addition, within Claim 14 the

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phrase "*the other wireless network devices*" has been amended to read "[[the]] *said at least two other wireless network devices*" to improve antecedent support. In addition, within Claim 15 the unnecessary phrase "*relative to the other devices*" was struck. In addition the term "*frame beacons*" in Claim 16 was amended to read "*beacon frames*" as more in keeping with other claim recitations.

Claims 17-18. Dependent Claims 17-18 have been amended to relate the material of these claims back to the preceding claim in relation to the distances described being "*based on monitoring of beacon frames*". In Claim 17 the unnecessary term "*signal strength*" was removed in reference to the "*vector coordinates generation module*" to increase clarity. In claim 18 the improper phrase "*three-dimensional plane*" has been corrected to read "*three-dimensional space*".

Claim 20. Independent Claim 20 has been amended to incorporate the limitations of dependent Claim 30 (now cancelled), whose material was found to be allowable if rewritten in an independent form. In addition motion sensing phrasing from Claim 30 have been incorporated to improve clarity. The elements of the preamble describing the plurality of wireless network devices has been brought down into the body of the claim, and distinctions recited between "*at least a first wireless network device*" and "*two other wireless network devices*", which further clarifies the plurality of wireless network devices.

Claim 21. Dependent Claim 21 has been amended to change the phrase "*within said plurality of wireless network devices*" has been added to clarify the group within which the "*other wireless network devices*" refers.

Claims 22-24 and 26. Dependent Claims 22-24 and 26 have been amended change dependency and to rearrange these claims to promote readability.

Claim 25. Dependent Claim 25 has been amended to remove an unnecessary phrase introducing a new wireless network device, described separately from said fourth (previously referred to as "new") wireless network device.

Claim 27. Dependent Claim 27 has been amended to change the phrase “*change*” to “*determining*” which is more consistent with the other claims in the application.

Claim 28-29. Dependent Claims 28-29 have been amended to more properly recite a proper relationship between the points and the two dimensional planes or three dimensional spaces. The change spells out that it is these points and the distances between these points that is of interest.

8. Amendments Made Without Prejudice or Estoppel.

Notwithstanding the amendments made and accompanying traversing remarks provided above, Applicant has made these amendments toward expediting allowance of the currently pending subject matter. However, Applicant does not acquiesce in the original ground for rejection with respect to the original form of these claims. These amendments have been made without any prejudice, waiver, or estoppel, and without forfeiture or dedication to the public, with respect to the original subject matter of the claims as originally filed or in their form immediately preceding these amendments. Applicant reserves the right to pursue the original scope of these claims in the future, such as through continuation practice for example.

9. Addition of Claims 33-39.

Claim 33. Independent Claim 33 was added which incorporates Claim 13, whose subject matter was found to be allowable, with intervening claims 12, 11, 10, 9, 7, 6 as well as base Claim 5.

Claim 34. Independent Claim 34 was added which incorporates Claim 25, whose subject matter was found to be allowable, with intervening claims 24, 23, 21 as well as base Claim 20.

Claims 35-39. Dependent Claims 35-39 include the material of dependent claims 26-30, (depending from Claim 25) to now depend from added independent Claim 34 which contains Claim 25, the intervening claims with base claim 20.

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As the above new claims comprise combinations of existing claims found to be allowable, no additional support is necessary for the amendments and no additional support is necessary denoting how these claims overcome current rejections.

10. Additional Claim fees.

An appropriate fee is enclosed for the new claims.

11. Conclusion.

Based on the foregoing, Applicant respectfully requests that the various grounds for rejection in the Office Action be reconsidered and withdrawn with respect to the presently amended form of the claims, and that a Notice of Allowance be issued for the present Application to pass to issuance.

In the event any further matters remain at issue with respect to the present application, Applicant respectfully requests that the Examiner please contact the undersigned below at the telephone number indicated in order to discuss such matter prior to the next action on the merits of this application.

Date: 3/1/06

Respectfully submitted,



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Attachment: Replacement Drawing Sheet